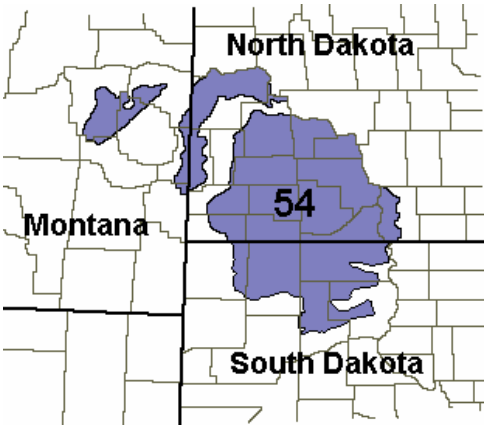
United States Department of Agriculture
Natural Resources Conservation Service

Ecological Site Description



Site Name: Loamy Terrace

Site Type: Rangeland

Site ID: R054XY041ND

Major Land Resource Area (MLRA): 54 – Rolling Soft Shale Plain

For more information on MLRA's refer to the following web site: http://www.essc.psu.edu/soil_info/soil_lrr/.

Physiographic Features

This soil occurs on level to nearly level occasionally flooded floodplains and terraces.

Landform: floodplain and terrace. **Aspect:** NA

	Minimum	Maximum
Elevation (feet):	1600	3600
Slope (percent):	0	2
Water Table Depth (inches):	54	>72
Flooding:		
Frequency:	Rare	Occasional
Duration:	Very brief	Brief
Ponding:		
Depth (inches):	0	0
Frequency:	None	None
Duration:	None	None
Runoff Class:	Negligible	Medium

Climatic Features

MLRA 54 is considered to have a continental climate – cold winters and hot summers, low humidity, light rainfall, and much sunshine. Extremes in temperature are characteristic. The climate is the result of this MLRA's location in the geographic center of North America. There are few natural barriers on the northern Great Plains. The air masses move unobstructed across the plains and account for rapid changes in temperature.

Annual precipitation ranges from 14 to 18 inches per year. The normal average annual temperature is about 42°F. January is the coldest month with average temperatures ranging from about 13°F (Beach, North Dakota (ND),) to about 16°F (Bison, South Dakota (SD)). July is the warmest month with temperatures averaging from about 69°F (Beach, ND,) to about 72°F (Timber Lake, SD). The range of normal average monthly temperatures between the coldest and warmest months is about 57°F. This large annual range attests to the continental nature of this MLRA's climate. Hourly winds are estimated to average about 11 miles per hour annually, ranging from about 13 miles per hour during the spring to about 10 miles per hour during the summer. Daytime winds are generally

stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 50 miles per hour.

Growth of native cool-season plants begins in late March and continues to early to mid July. Native warm-season plants begin growth in mid May and continue to the end of August. Green up of cool-season plants can occur in September and October when adequate soil moisture is present.

	Minimum	Maximum
Frost-free period (days):	119	136
Freeze-free period (days):	139	157
Mean Annual Precipitation (inches):	14	18

Average Monthly Precipitation (inches) and Temperature (ºF):

	Precip. Min.	Precip. Max	Temp. Min.	Temp. Max.
January	0.41	0.54	2.2	23.8
February	0.37	0.61	8.7	30.4
March	0.51	1.07	17.1	40.0
April	1.13	1.88	28.9	56.8
May	1.98	2.83	40.5	69.3
June	2.83	3.29	49.8	78.3
July	2.05	2.25	54.6	85.2
August	1.49	2.07	53.0	84.3
September	1.29	1.45	42.0	73.4
October	0.89	1.35	31.6	60.4
November	0.48	0.61	19.0	41.5
December	0.42	0.55	8.1	29.0

Climate Stations		Period	
Station ID	**Location or Name**	**From**	**To**
ND0590	Beach	1949	1999
MT7560	Sidney	1949	1999
SD8307	Timber Lake	1948	1999
ND2183	Dickinson FAA AP	1948	1999

For local climate stations that may be more representative, refer to http://www.wcc.nrcs.usda.gov.

Influencing Water Features

Stream Type: C6
(Rosgen System)

Representative Soil Features

The common features of soils in this site are the loam to silt loam-textured subsoils and slopes of zero to two percent. The soils in this site are well drained and formed in alluvium. The silt loam to clay loam surface layer is 4 to 20 inches thick. The soils have a moderate to moderately slow infiltration rate. This site should show no evidence of rills, wind scoured areas, or pedestalled plants. Water flow paths are broken, irregular in appearance, or discontinuous with numerous debris dams or vegetative barriers. The soil surface is stable and intact. Subsurface soil layers are nonrestrictive to water movement and root penetration.

These soils are susceptible to water and wind erosion. The hazard of erosion increases where vegetative cover is not adequate. Loss of the soil surface layer can result in a shift in species composition and/or production.

Major soil series correlated to this ecological site can be found in Section II of the Natural Resources Conservation Service (NRCS) Field Office Technical Guide or the following web sites:

North Dakota: http://www.nd.nrcs.usda.gov.
South Dakota: http://www.sd.nrcs.usda.gov.
Montana: http://www.mt.nrcs.usda.gov.

Parent Material Kind: alluvium
Parent Material Origin: sedimentary, unspecified
Surface Texture: silt loam, loam, clay loam
Surface Texture Modifier: none
Subsurface Texture Group: loamy
Surface Fragments ≤ 3" (% Cover): 0
Surface Fragments > 3" (%Cover): 0
Subsurface Fragments ≤ 3" (% Volume): 0-10
Subsurface Fragments > 3" (% Volume): 0-5

	Minimum	Maximum
Drainage Class:	well	well
Permeability Class:	moderately slow	moderate
Depth to first restrictive layer (inches):	>72	>72
Electrical Conductivity (mmhos/cm)*:	0	4
Sodium Absorption Ratio*:	0	2
Soil Reaction (1:1 Water)*:	6.1	8.4
Soil Reaction (0.1M CaCl2)*:	NA	NA
Available Water Capacity (inches)*:	6	7
Calcium Carbonate Equivalent (percent)*:	3	15

* - These attributes represent from 0-40 inches or to the first restrictive layer.

Plant Communities

Ecological Dynamics of the Site:
The site developed under Northern Great Plains climatic conditions, and included natural influence of large herbivores and occasional fire. Changes will occur in the plant communities due to climatic conditions and/or management actions. Due to the nature of the soils, the site is considered very stable. Under continued adverse impacts, a slow decline in vegetative vigor and composition will occur. Under favorable vegetative management treatments the site can quickly return to the Historic Climax Plant Community (HCPC).

The plant community upon which interpretations are primarily based is the HCPC. The HCPC has been determined by study of rangeland relic areas, areas protected from excessive disturbance, and areas under long-term rotational grazing regimes. Trends in plant community dynamics ranging from heavily grazed to lightly grazed areas, seasonal use pastures, and historical accounts also have been considered. Subclimax plant communities, states, transitional pathways, and thresholds have been determined through similar studies and experience.

Continuous grazing without adequate recovery periods following each grazing occurrence over several years causes this site to depart from the HCPC. Species such as western wheatgrass and blue grama will initially increase. Big bluestem, green needlegrass, sideoats grama, and porcupine

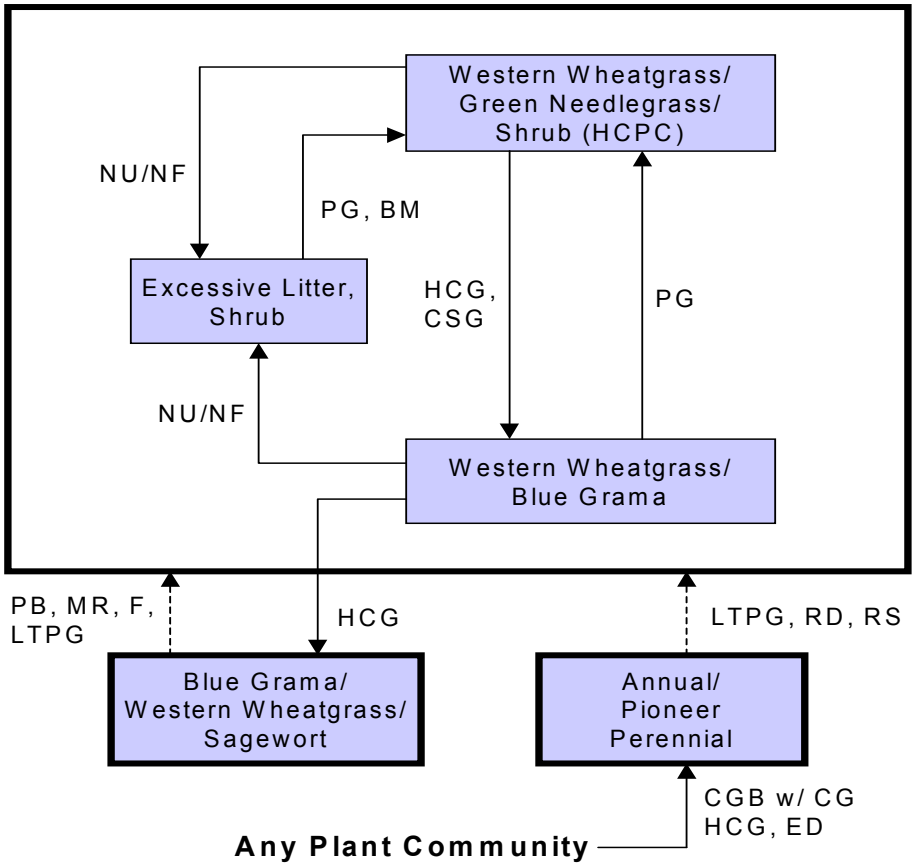
grass will decrease in frequency and production. Heavy continuous grazing causes blue grama to increase.

In time, heavy continuous grazing will likely cause blue grama to dominate and pioneer perennials, annuals, and club moss (in its range) to increase. This plant community is relatively stable and the competitive advantage prevents other species from establishing. This plant community is less productive than the HCPC. Runoff increases and infiltration will decrease. Soil erosion will be minimal.

Extended periods of non-use and/or lack of fire will result in a plant community having high litter levels, which favors an increase in Kentucky bluegrass and/or smooth bromegrass and in time, shrubs, and trees such as western snowberry, chokecherry, and green ash.

The following is a diagram that illustrates the common plant communities that can occur on the site and the transition pathways between communities. The ecological processes will be discussed in more detail in the plant community descriptions following the diagram.

Plant Communities and Transitional Pathways



BM - Brush management; **CGB w/ CG** - cropped go-back with continuous grazing; **CSG** - continuous seasonal grazing; **ED** - excessive defoliation; **F** - fertilization followed with prescribed grazing; **HCG** - heavy continuous grazing; **HCPC** - Historical Climax Plant Community; **LTPG** - long-term prescribed grazing; **MR** - mechanical renovation with prescribed grazing; **NU/NF** - extended period of non-use & no fire; **PB** - prescribed burning; **PG** - prescribed grazing; **RD** - removal of disturbance; **RS** - range seeding with prescribed grazing.

Plant Community Composition and Group Annual Production

		Western Wheatgrass/Green Needlegrass/Shrub (HCPC)		
COMMON/GROUP NAME	**SYMBOL**	**Group**	**lbs./acre**	**% Comp**
GRASSES & GRASS-LIKES			*2175 - 2465*	*75 - 85*
western wheatgrass	PASM	1	290 - 580	10 - 20
NEEDLEGRASS		**2**	**290 - 580**	**10 - 20**
green needlegrass	NAVI4	2	290 - 580	10 - 20
porcupine grass	HESP11	2	0 - 290	0 - 10
GRAMA		**3**	**116 - 232**	**4 - 8**
blue grama	BOGR2	3	116 - 232	4 - 8
OTHER WARM SEASON		**4**	**116 - 290**	**4 - 10**
big bluestem	ANGE	4	116 - 203	4 - 7
sideoats grama	BOCU	4	87 - 203	3 - 7
OTHER NATIVE PERENNIALS		**5**	**145 - 290**	**5 - 10**
needleandthread	HECOC8	5	87 - 145	3 - 5
plains reedgrass	CAMO	5	29 - 87	1 - 3
Sandberg bluegrass	POSE	5	29 - 87	1 - 3
prairie junegrass	KOMA	5	29 - 87	1 - 3
bearded wheatgrass	ELTRS	5	58 - 116	2 - 4
prairie dropseed	SPHE	5	87 - 145	3 - 5
inland saltgrass	DISP	5	0 - 29	0 - 1
other perennial grasses	2GP	5	29 - 87	1 - 3
GRASS-LIKES		**6**	**29 - 145**	**1 - 5**
needleleaf sedge	CADU6	6	29 - 87	1 - 3
threadleaf sedge	CAFI	6	29 - 58	1 - 2
Penn sedge	CAPE6	6	58 - 87	2 - 3
other grass-likes	2GL	6	0 - 29	0 - 1
FORBS		*7*	*145 - 290*	*5 - 10*
American vetch	VIAM	7	29 - 58	1 - 2
bluebells	MERTE	7	29 - 29	1 - 1
cudweed sagewort	ARLU	7	29 - 58	1 - 2
dotted gayfeather	LIPU	7	29 - 29	1 - 1
goldenrod	SOLID	7	29 - 58	1 - 2
groundplum milkvetch	ASCR2	7	29 - 29	1 - 1
heath aster	SYER	7	29 - 58	1 - 2
larkspur	DELPH	7	0 - 29	0 - 1
Maximilian sunflower	HEMA2	7	29 - 58	1 - 2
mint	MENTH	7	29 - 29	1 - 1
prairie coneflower	RACO3	7	29 - 29	1 - 1
purple coneflower	ECAN2	7	0 - 29	0 - 1
purple prairie clover	DAPU5	7	29 - 58	1 - 2
rush skeletonweed	LYJU	7	0 - 29	0 - 1
scarlet gaura	GACO5	7	29 - 29	1 - 1
scarlet globemallow	SPCO	7	29 - 29	1 - 1
silverleaf scurfpea	PEAR6	7	29 - 29	1 - 1
wavyleaf thistle	CIUN	7	0 - 29	0 - 1
western wallflower	ERCAC	7	29 - 29	1 - 1
western yarrow	ACMI2	7	29 - 58	1 - 2
wild onion	ALLIU	7	0 - 29	0 - 1
other perennial forbs	2FP	7	0 - 29	0 - 1
SHRUBS		*8*	*290 - 435*	*10 - 15*
chokecherry	PRVI	8	29 - 58	1 - 2
currant	RIBES	8	29 - 29	1 - 1
fringed sagewort	ARFR4	8	29 - 87	1 - 3
juneberry	AMAL2	8	29 - 58	1 - 2
prairie rose	ROAR3	8	29 - 58	1 - 2
prickly rose	ROAC	8	29 - 58	1 - 2
silver buffaloberry	SHAR	8	0 - 58	0 - 2
silver sagebrush	ARCA13	8	0 - 290	0 - 10
western snowberry	SYOC	8	29 - 290	1 - 10
wild plum	PRAM	8	29 - 58	1 - 2
winterfat	KRLA2	8	0 - 87	0 - 3
other shrubs	2SHRUB	8	0 - 29	0 - 1
TREES		*9*	*0 - 58*	*0 - 2*
plains cottonwood	PODEM	9	0 - 29	0 - 1
boxelder	ACNE2	9	0 - 29	0 - 1
green ash	FRPE	9	0 - 29	0 - 1
American elm	ULAM	9	0 - 29	0 - 1

Annual Production lbs./acre	LOW	RV	HIGH
GRASSES & GRASS-LIKES	1640 -	2291	- 2965
FORBS	140 -	218	- 325
SHRUBS	220 -	363	- 450
TREES	0 -	29	- 60
TOTAL	2000 -	2900	- 3800

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors. RV = Representative Value.

Plant Community Composition and Group Annual Production

		Western Wheatgrass/Green Needlegrass/Shrub (HCPC)			Western Wheatgrass/ Blue Grama			Excessive Litter, Shrub			Blue Grama/Western Wheatgrass/Sagewort		
COMMON/GROUP NAME	SYMBOL	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp	Grp	lbs./acre	% Comp
GRASSES & GRASS-LIKES			*2175 - 2465*	*75 - 85*		*700 - 800*	*70 - 80*		*1560 - 2210*	*60 - 85*		*520 - 640*	*65 - 80*
western wheatgrass	PASM	1	290 - 580	10 - 20	1	100 - 150	10 - 15	1	26 - 130	1 - 5	1	40 - 120	5 - 15
NEEDLEGRASS		**2**	**290 - 580**	**10 - 20**	**2**	**0 - 10**	**0 - 1**	**2**	**26 - 130**	**1 - 5**	**2**		
green needlegrass	NAVI4	2	290 - 580	10 - 20	2	0 - 10	0 - 1	2	26 - 130	1 - 5			
porcupine grass	HESP11	2	0 - 290	0 - 10				2	26 - 130	1 - 5			
GRAMA		**3**	**116 - 232**	**4 - 8**	**3**	**300 - 350**	**30 - 35**	**3**	**0 - 26**	**0 - 1**	**3**	**240 - 320**	**30 - 40**
blue grama	BOGR2	3	116 - 232	4 - 8	3	300 - 350	30 - 35	3	0 - 26	0 - 1	3	240 - 320	30 - 40
OTHER WARM SEASON		**4**	**116 - 290**	**4 - 10**	**4**			**4**	**0 - 26**	**0 - 1**	**4**		
big bluestem	ANGE	4	116 - 203	4 - 7				4	0 - 26	0 - 1			
sideoats grama	BOCU	4	87 - 203	3 - 7				4	0 - 26	0 - 1			
OTHER NATIVE PERENNIALS		**5**	**145 - 290**	**5 - 10**	**5**	**100 - 130**	**10 - 13**	**5**	**52 - 156**	**2 - 6**	**5**	**24 - 48**	**3 - 6**
needleandthread	HECOC8	5	87 - 145	3 - 5	5	50 - 100	5 - 10	5	78 - 130	3 - 5	5	16 - 40	2 - 5
plains reedgrass	CAMO	5	29 - 87	1 - 3				5	0 - 26	0 - 1			
Sandberg bluegrass	POSE	5	29 - 87	1 - 3	5	20 - 40	2 - 4	5	104 - 156	4 - 6	5	16 - 40	2 - 5
prairie junegrass	KOMA	5	29 - 87	1 - 3	5	20 - 40	2 - 4	5	26 - 52	1 - 2	5	8 - 16	1 - 2
bearded wheatgrass	ELTRS	5	58 - 116	2 - 4				5	0 - 26	0 - 1			
prairie dropseed	SPHE	5	87 - 145	3 - 5									
inland saltgrass	DISP	5	0 - 29	0 - 1	5	20 - 40	2 - 4	5	0 - 26	0 - 1	5	16 - 40	2 - 5
other perennial grasses	2GP	5	29 - 87	1 - 3	5	0 - 10	0 - 1	5	26 - 52	1 - 2	5	0 - 8	0 - 1
GRASS-LIKES		**6**	**29 - 145**	**1 - 5**	**6**	**40 - 70**	**4 - 7**	**6**	**0 - 78**	**0 - 3**	**6**	**24 - 48**	**3 - 6**
needleleaf sedge	CADU6	6	29 - 87	1 - 3	6	30 - 50	3 - 5	6	0 - 26	0 - 1	6	16 - 32	2 - 4
threadleaf sedge	CAFI	6	29 - 58	1 - 2	6	30 - 50	3 - 5	6	0 - 26	0 - 1	6	24 - 40	3 - 5
Penn sedge	CAPE6	6	58 - 87	2 - 3				6	0 - 78	0 - 3			
other grass-likes	2GL	6	0 - 29	0 - 1	6	0 - 10	0 - 1	6	0 - 26	0 - 1			
NON-NATIVE GRASSES		**7**			**7**			**7**	**520 - 1040**	**20 - 40**	**7**		
Kentucky bluegrass	POPR							7	260 - 910	10 - 35			
smooth bromegrass	BRIN2							7	0 - 910	0 - 35			
crested wheatgrass	AGCR							7	0 - 520	0 - 20			
cheatgrass	BRTE							7	0 - 130	0 - 5			
FORBS		*8*	*145 - 290*	*5 - 10*	*8*	*50 - 150*	*5 - 15*	*8*	*26 - 130*	*1 - 5*	*8*	*80 - 120*	*10 - 15*
American vetch	VIAM	8	29 - 58	1 - 2	8	0 - 10	0 - 1	8	0 - 26	0 - 1			
bluebells	MERTE	8	29 - 29	1 - 1									
common dandelion	TAOF				8	10 - 20	1 - 2	8	26 - 52	1 - 2	8	8 - 16	1 - 2
cudweed sagewort	ARLU	8	29 - 58	1 - 2	8	30 - 50	3 - 5	8	26 - 52	1 - 2	8	40 - 80	5 - 10
curlycup gumweed	GRSQ				8	10 - 20	1 - 2				8	8 - 24	1 - 3
dotted gayfeather	LIPU	8	29 - 29	1 - 1				8	0 - 26	0 - 1			
goldenrod	SOLID	8	29 - 58	1 - 2	8	10 - 20	1 - 2	8	26 - 52	1 - 2			
groundplum milkvetch	ASCR2	8	29 - 29	1 - 1				8	0 - 26	0 - 1			
heath aster	SYER	8	29 - 58	1 - 2	8	30 - 50	3 - 5	8	26 - 52	1 - 2	8	24 - 32	3 - 4
larkspur	DELPH	8	0 - 29	0 - 1				8	0 - 26	0 - 1			
Maximilian sunflower	HEMA2	8	29 - 58	1 - 2				8	0 - 26	0 - 1			
mint	MENTH	8	29 - 29	1 - 1				8	0 - 26	0 - 1			
prairie coneflower	RACO3	8	29 - 29	1 - 1	8	30 - 50	3 - 5	8	0 - 26	0 - 1	8	32 - 40	4 - 5
purple coneflower	ECAN2	8	0 - 29	0 - 1	8	0 - 10	0 - 1						
purple prairie clover	DAPU5	8	29 - 58	1 - 2									
rose pussytoes	ANRO2				8	10 - 20	1 - 2				8	16 - 24	2 - 3
rush skeletonweed	LYJU	8	0 - 29	0 - 1	8	10 - 20	1 - 2	8	0 - 26	0 - 1	8	0 - 8	0 - 1
scarlet gaura	GACO5	8	29 - 29	1 - 1				8	0 - 26	0 - 1			
scarlet globemallow	SPCO	8	29 - 29	1 - 1	8	10 - 20	1 - 2	8	0 - 26	0 - 1	8	16 - 24	2 - 3
silverleaf scurfpea	PEAR6	8	29 - 29	1 - 1	8	20 - 30	2 - 3	8	26 - 52	1 - 2	8	24 - 32	3 - 4
sweetclover	MELIL				8	0 - 50	0 - 5	8	0 - 130	0 - 5	8	0 - 80	0 - 10
wavyleaf thistle	CIUN	8	0 - 29	0 - 1	8	10 - 20	1 - 2	8	26 - 52	1 - 2	8	24 - 32	3 - 4
western salsify	TRDU				8	10 - 20	1 - 2	8	26 - 52	1 - 2	8	8 - 16	1 - 2
western wallflower	ERCAC	8	29 - 29	1 - 1	8	0 - 10	0 - 1	8	0 - 26	0 - 1			
western yarrow	ACMI2	8	29 - 58	1 - 2	8	30 - 50	3 - 5	8	26 - 52	1 - 2	8	24 - 32	3 - 4
wild onion	ALLIU	8	0 - 29	0 - 1	8	0 - 10	0 - 1				8	0 - 8	0 - 1
other perennial forbs	2FP	8	0 - 29	0 - 1	8	10 - 20	1 - 2	8	0 - 52	0 - 2	8	0 - 8	0 - 1
non-native forbs	2FORB				8	0 - 30	0 - 3	8	0 - 130	0 - 5	8	0 - 16	0 - 2
SHRUBS		*9*	*290 - 435*	*10 - 15*	*9*	*50 - 100*	*5 - 10*	*9*	*390 - 572*	*15 - 22*	*9*	*40 - 120*	*5 - 15*
chokecherry	PRVI	9	29 - 58	1 - 2				9	26 - 78	1 - 3			
currant	RIBES	9	29 - 29	1 - 1				9	0 - 26	0 - 1			
fringed sagewort	ARFR4	9	29 - 87	1 - 3	9	50 - 100	5 - 10	9	0 - 26	0 - 1	9	40 - 120	5 - 15
juneberry	AMAL2	9	29 - 58	1 - 2				9	0 - 26	0 - 1			
prairie rose	ROAR3	9	29 - 58	1 - 2	9	10 - 20	1 - 2	9	0 - 26	0 - 1	9	0 - 8	0 - 1
prickly rose	ROAC	9	29 - 58	1 - 2				9	26 - 52	1 - 2			
silver buffaloberry	SHAR	9	0 - 58	0 - 2	9	0 - 10	0 - 1	9	52 - 130	2 - 5			
silver sagebrush	ARCA13	9	0 - 290	0 - 10	9	0 - 50	0 - 5	9	0 - 390	0 - 15	9	0 - 56	0 - 7
western snowberry	SYOC	9	29 - 290	1 - 10	9	0 - 20	0 - 2	9	130 - 520	5 - 20			
wild plum	PRAM	9	29 - 58	1 - 2				9	0 - 26	0 - 1			
winterfat	KRLA2	9	0 - 87	0 - 3				9	0 - 26	0 - 1			
other shrubs	2SHRUB	9	0 - 29	0 - 1	9	0 - 10	0 - 1	9	0 - 26	0 - 1			
TREES		*10*	*0 - 58*	*0 - 2*	*10*	*0 - 20*	*0 - 2*	*10*	*26 - 312*	*1 - 12*	*10*	*0 - 8*	*0 - 1*
plains cottonwood	PODEM	10	0 - 29	0 - 1	10	0 - 10	0 - 1	10	0 - 234	0 - 9	10	0 - 8	0 - 1
boxelder	ACNE2	10	0 - 29	0 - 1	10	0 - 10	0 - 1	10	0 - 130	0 - 5	10	0 - 8	0 - 1
green ash	FRPE	10	0 - 29	0 - 1	10	0 - 10	0 - 1	10	26 - 260	1 - 10	10	0 - 8	0 - 1
American elm	ULAM	10	0 - 29	0 - 1	10	0 - 10	0 - 1	10	0 - 130	0 - 5	10	0 - 8	0 - 1
Russian olive	ELAN				10	0 - 10	0 - 1	10	0 - 130	0 - 5	10	0 - 8	0 - 1
CRYPTOGAMS		*11*			*11*	*10 - 20*	*1 - 2*	*11*			*11*	*8 - 16*	*1 - 2*
clubmoss	SEDE2				11	10 - 20	1 - 2				11	8 - 16	1 - 2

Annual Production lbs./acre	LOW RV HIGH	LOW RV HIGH	LOW RV HIGH	LOW RV HIGH
GRASSES & GRASS-LIKES	1640 - 2291 - 2965	605 - 800 - 1090	1430 - 1872 - 2365	385 - 604 - 820
FORBS	140 - 218 - 325	45 - 100 - 155	25 - 78 - 135	75 - 100 - 125
SHRUBS	220 - 363 - 450	45 - 75 - 105	220 - 481 - 650	35 - 80 - 125
TREES	0 - 29 - 60	0 - 10 - 25	25 - 169 - 350	0 - 4 - 10
CRYPTOGAMS		5 - 15 - 25		5 - 12 - 20
TOTAL	2000 - 2900 - 3800	700 - 1000 - 1400	1700 - 2600 - 3500	500 - 800 - 1100

This list of plants and their relative proportions are based on near normal years. Fluctuations in species composition and relative production may change from year to year dependent upon precipitation or other climatic factors. RV = Representative value.

Plant Community and Vegetation State Narratives

Following are the narratives for each of the described plant communities. These plant communities may not represent every possibility, but they are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data are collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as "Desired Plant Communities" (DPC). According to the USDA NRCS National Range and Pasture Handbook, DPC's will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

Western Wheatgrass/Green Needlegrass/Shrub Plant Community

This is the interpretive plant community and is considered to be the HCPC. This community evolved with grazing by large herbivores and occasional prairie fire. It is well suited for grazing by domestic livestock and can be found on areas that are properly managed with prescribed grazing that allows for adequate recovery periods following each grazing event. The potential vegetation is about 73 percent grasses and grass-like plants, 10 percent forbs, 15 percent shrubs, and 2 percent trees. Major grasses include green needlegrass and western wheatgrass. Other grasses occurring on this community includes bearded wheatgrass, needleandthread, sideoats grama, blue grama, big bluestem, and porcupine grass. Major forbs and shrubs include American vetch, purple prairie clover, cudweed sagewort, western yarrow, sunflower, western snowberry, and/or silver sagebrush, and fringed sagewort. Scattered green ash, plains cottonwood, and American elm may occur.

This plant community is well adapted to the Northern Great Plains climatic conditions. Individual species can vary greatly in production depending on growing conditions (timing and amount of precipitation and temperature). Community dynamics, nutrient cycle, water cycle, and energy flow are functioning properly. Plant litter is properly distributed with very little movement off-site and natural plant mortality is very low. The diversity in plant species allows for high drought tolerance. Run-off from adjacent sites and moderate or high available water capacity provides a favorable soil-water-plant relationship.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during a normal year:
Growth curve number: ND5401
Growth curve name: Missouri Slope, Native Grasslands, Cool-season Dominant.
Growth curve description: Cool-season, mid-grass dominant.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	8	24	45	10	3	5	2	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Non-use and lack of fire for extended periods of time will convert this plant community to the *Excessive Litter, Shrub Plant Community*.
- Heavy, continuous grazing will convert the plant community to the *Western Wheatgrass/Blue Grama Plant Community*.
- Continuous seasonal (i.e. spring) grazing will convert the plant community to the *Western Wheatgrass/Blue Grama Plant Community*.
- Excessive defoliation (i.e., areas of heavy animal concentration) will convert the plant community to the *Annual/Pioneer Perennial Plant Community*.

- Cropped go-back land with continuous grazing will convert this plant community to the *Annual/Pioneer Perennial Plant Community*.

Western Wheatgrass/Blue Grama Plant Community

This plant community can slowly develop from the adverse effects of continuous grazing without adequate recovery periods between each grazing event during the growing season. Recognition of this plant community will enable the land user to implement key management decisions before a significant ecological threshold is crossed.

Blue grama and western wheatgrass are the dominant species. Green needlegrass has been greatly reduced. Big bluestem, porcupine grass and sideoats grama may have been removed. Forb species include western yarrow, asters, prairie coneflower, silverleaf scurfpea, wavyleaf thistle, and western salsify. Western snowberry, chokecherry, Juneberry, and plum are greatly reduced while other shrub species would tend to be heavily browsed. If silver sagebrush is the principle shrub it would be sustaining.

This plant community is relatively stable and less productive than the HCPC. Reduction of litter and reduced plant vigor result in higher soil temperatures, poor water infiltration rates, increased runoff and high evapo-transpiration rates. This plant community can occur throughout the site, on spot grazed areas, and around water sources where season-long grazing patterns occur. Soil erosion will be minimal due to the sod forming habit of blue grama.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during a normal year:
Growth curve number: ND5404
Growth curve name: Missouri Slope, Warm-season Dominant, Cool-season Subdominant.
Growth curve description: Short warm-season dominant, mid cool-season subdominant and club moss.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	1	5	20	38	25	8	3	0	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Heavy continuous grazing without adequate recovery opportunity between grazing events will move this plant community across an ecological threshold to the *Blue Grama/Western Wheatgrass/Sagewort Plant Community*.

- Prescribed grazing with adequate recovery periods following each grazing event and proper stocking will shift this plant community back to the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community (HCPC)*.

- Excessive defoliation (i.e., areas of heavy animal concentration,) will convert the plant community to the *Annual/Pioneer Perennial Plant Community*.

- Cropped go-back land with continuous grazing will convert this plant community to the *Annual/Pioneer Perennial Plant Community*.

- Non-use and no fire for extended periods of time will convert this plant community to the *Excessive Litter, Shrub Plant Community*.

Excessive Litter, Shrub Plant Community

This plant community develops after an extended period (10 to 20 years or more) of non-use and exclusion of fire. Eventually litter levels become high enough to reduce native grass vigor, diversity, and density.

Kentucky bluegrass and/or smooth bromegrass tend to invade and may dominate this plant community. Common forbs include sweetclover, cudweed sagewort, and goldenrod species. Shrubs such as western snowberry and/or silver sagebrush, buffaloberry, and chokecherry will increase in density and cover and eventually tree species such as green ash.

This plant community is resistant to change without prescribed grazing and/or fire. The combination of both grazing and fire is most effective in moving this plant community toward the HCPC. Soil erosion is low. Runoff is similar to the HCPC. Once the advanced stage of this plant community is reached, time and external resources will be needed to see any immediate recovery in the diversity of the site.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during a normal year:
Growth curve number: ND5406
Growth curve name: Missouri Slope, Introduced Cool-season Grasses.
Growth curve description: Introduced cool-season grasses.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	3	10	35	35	5	2	8	2	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Prescribed grazing or prescribed burning followed by prescribed grazing will move this plant community toward the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community* (*HCPC)*. This would require long-term management with prescribed grazing and/or prescribed burning under controlled conditions.

- Excessive defoliation (i.e., areas of heavy animal concentration,) will convert the plant community to the *Annual/Pioneer Perennial Plant Community*.

- Cropped go-back land with continuous grazing will convert this plant community to the *Annual/Pioneer Perennial Plant Community*.

Blue Grama/Western Wheatgrass/Sagewort

This plant community developed with heavy continuous grazing without adequate recovery periods between grazing events. Blue grama with an evenly scattered overstory of western wheatgrass, cudweed sagewort, and fringe sagewort dominates the community. The western wheatgrass is low in vigor. Green needlegrass has been mostly removed. Rose pussytoes, western yarrow, curlycup gumweed, heath aster, wavyleaf thistle, and sweetclover have increased. Key shrubs have been severely reduced in vigor or removed completely. Where silver sagebrush is the dominant shrub, remnants will remain scattered throughout the site which protects some of the remaining decreasers such as green needlegrass. Remnant trees remain, but regeneration is not occurring.

This plant community is resistant to change due to grazing tolerance of blue grama. A significant amount of production and diversity has been lost when compared to the HCPC. Loss of cool season grasses, tall warm season grasses, shrub component, and nitrogen fixing forbs have negatively impacted energy flow and nutrient cycling. Water infiltration is reduced significantly due to the massive shallow root system characteristic of overgrazed plant communities. Soil loss may be accelerated where concentrated flows occur.

The following growth curve is an estimate of the monthly percentages of total annual growth of the dominant species expected during a normal year:
Growth curve number: ND5404
Growth curve name: Missouri Slope, Warm-season Dominant, Cool-season Subdominant.
Growth curve description: Short warm-season dominant, mid cool-season subdominant & club moss.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	1	5	20	38	25	8	3	0	0	0

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Long term prescribed grazing with adequate recovery periods following each grazing event and proper stocking over long periods of time can move this plant community toward the *Western Wheatgrass/Blue Grama Plant Community*. It may eventually return to the *HCPC* or associated successional plant community stages assuming an adequate seed/vegetative source is available. This process may take greater than 15 years.

- Fertilization combined with prescribed grazing may move this plant community through the successional stages leading toward the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community*.

- Mechanical renovation followed by prescribed grazing will reduce club moss, increase western wheatgrass, and eventually shift this plant community back toward the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community*.

- Prescribed burning may reduce club moss, and eventually convert this plant community back towards the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community*.

- Excessive defoliation (i.e., areas of heavy animal concentration,) will convert the plant community to the *Annual/Pioneer Perennial Plant Community*.

- Cropped go-back land with continuous grazing will convert this plant community to the *Annual/Pioneer Perennial Plant Community*.

Annual/Pioneer Perennial Plant Community

This plant community develops under severe disturbance and/or excessive defoliation. This can result from heavy livestock or wildlife concentration, and cropping abandonment (go-back land). The dominant vegetation includes pioneer annual grasses, forbs, invaders, and early successional biennial, and perennial species. Grasses may include sixweeks fescue, smooth bromegrass, annual brome, crested wheatgrass, needleandthread, prairie Junegrass, and western wheatgrass. The dominant forbs may include curlycup gumweed, lambsquarter, salsify, kochia, field bindweed, thistles, western ragweed, pussytoes, prostrate verbena, and other early successional species. Shrubs that may be present include prairie rose and fringed sagewort. Plant species from adjacent ecological sites may become minor components of this plant community. The community also is susceptible to invasion of other non-native species due to severe soil disturbances and relatively high percent of bare ground. Many annual and perennial forbs, including non-native species, have invaded the site.

This plant community is resistant to change, as long as soil disturbance or severe vegetation defoliation persists, thus holding back secondary plant succession. Soil erosion is potentially high in this vegetation state. Reduced surface cover, low plant density, low plant vigor, loss of root biomass, and soil compaction, all contribute to decreased water infiltration, increased runoff, and accelerated erosion rates.

Significant economic inputs, management, and time would be required to move this plant community toward a higher successional stage and a more productive plant community. Secondary succession is highly variable, depending upon availability and diversity of a viable seed bank of higher successional species within the existing plant community and neighboring plant communities. This plant community can be renovated to improve the production capability, but management changes would be needed to maintain the new plant community. The total annual production ranges from 500 to 1,100 lbs./ac. (air-dry weight) depending upon growing conditions.

Transitional pathways and/or community pathways leading to other plant communities are as follows:

- Under long-term prescribed grazing and removal of disturbance, including adequate rest periods, this plant community will move through the successional stages, and may eventually lead to the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community (HCPC)*. Depending on the slope, aspect, and size, and if adequate perennial plants exist, this change can occur more rapidly. This process will take a long period of time (50+ years).

- Removal of disturbance followed by range seeding with deferment and prescribed grazing can convert this to a plant community resembling the *Western Wheatgrass/Green Needlegrass/Shrub Plant Community*.

Ecological Site Interpretations

Animal Community – Wildlife Interpretations

-- Under Development --

Western Wheatgrass/Green Needlegrass/Shrub Plant Community:

Western Wheatgrass/Blue Grama Plant Community:

Blue Grama/Western Wheatgrass/Sagewort Plant Community:

Excessive Litter, Shrub Plant Community:

Annual/Pioneer Perennial Plant Community:

Animal Preferences (Quarterly – 1,2,3,4†)

Common Name	Cattle				Sheep				Horses				Deer				Antelope				Bison				Elk			
Grasses & Grass-likes																												
bearded wheatgrass	U	P	U	U	N	D	U	N	U	P	U	U	N	D	U	N	N	D	U	N	U	P	U	U	U	P	U	U
big bluestem	U	D	P	D	U	D	U	U	U	D	P	D	U	D	U	U	U	D	U	U	U	D	P	D	U	D	P	D
blue grama	U	D	P	U	D	P	P	D	U	D	P	U	D	P	P	D	D	P	P	D	U	D	P	U	U	D	P	U
cheatgrass	U	D	U	U	N	P	U	N	U	D	U	U	N	P	U	N	N	P	U	N	U	D	U	U	U	D	U	U
crested wheatgrass	U	P	U	D	U	P	N	N	U	P	U	D	U	P	N	N	U	P	N	N	U	P	U	D	U	P	U	D
green needlegrass	U	P	U	D	N	P	N	P	U	P	U	D	N	P	N	P	N	P	N	P	U	P	U	D	U	P	U	D
inland saltgrass	N	U	U	N	N	N	N	N	N	U	U	N	N	N	N	N	N	N	N	N	N	U	U	N	N	U	U	N
Kentucky bluegrass	U	D	U	U	U	P	N	D	U	D	U	U	U	P	N	D	U	P	N	D	U	D	U	U	U	D	U	U
needleandthread	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	N	D	N	U	U	D	U	D	U	D	U	D
needleleaf sedge	U	D	U	D	U	P	N	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D
Penn sedge	U	P	U	D	U	P	N	D	U	P	U	D	U	D	U	D	U	D	U	D	U	P	U	D	U	P	U	D
plains reedgrass	U	D	U	U	N	D	N	N	U	D	U	U	N	D	N	N	N	D	N	N	U	D	U	U	U	D	U	U
porcupine grass	U	P	U	D	N	D	N	U	U	P	U	D	N	D	N	U	N	D	N	U	U	P	U	D	U	P	U	D
prairie dropseed	N	U	P	U	N	U	D	U	N	U	P	U	N	U	D	U	N	U	D	U	N	U	P	U	N	U	P	U
prairie junegrass	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	N	D	N	U	U	D	U	D	U	D	U	D
Sandberg bluegrass	N	U	N	N	N	D	N	N	N	U	N	N	N	D	N	N	N	D	N	N	N	U	N	N	N	U	N	N
sideoats grama	U	D	P	U	U	P	D	U	U	D	P	U	U	P	D	U	U	P	D	U	U	D	P	U	U	D	P	U
smooth bromegrass	U	P	U	U	U	P	U	U	U	P	U	U	U	P	U	U	U	P	U	U	U	P	U	U	U	P	U	U
threadleaf sedge	U	D	U	D	U	P	N	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D	U	D
western wheatgrass	U	P	D	U	N	D	N	N	U	P	D	U	N	D	N	N	N	D	N	N	U	P	D	U	U	P	D	U
Forbs																												
American vetch	U	D	P	U	U	P	P	U	U	D	P	U	U	P	P	U	U	P	P	U	U	D	P	U	U	P	P	U
bluebells	U	D	U	U	U	P	P	U	U	D	U	U	U	P	P	U	U	P	P	U	U	D	U	U	U	P	P	U
cudweed sagewort	U	U	U	U	U	U	D	U	U	U	U	U	U	U	D	U	U	U	D	U	U	U	U	U	U	U	D	U
dotted gayfeather	U	U	D	U	U	P	P	U	U	U	D	U	U	P	P	U	U	P	P	U	U	U	D	U	U	P	P	U
goldenrod	U	U	D	U	N	U	U	N	U	U	D	U	N	U	U	N	N	U	U	N	U	U	D	U	N	U	U	N
groundplum milkvetch	U	D	U	U	U	D	D	U	U	D	U	U	U	D	D	U	U	D	D	U	U	D	U	U	U	D	D	U
heath aster	U	U	D	U	U	U	P	U	U	U	D	U	U	U	P	U	U	U	P	U	U	U	D	U	U	U	P	U
larkspur	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
Maximilian sunflower	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U	U	D	P	U
mint	N	N	U	N	N	U	U	N	N	N	U	N	N	U	U	N	N	U	U	N	N	N	U	N	N	N	U	N
prairie coneflower	U	U	D	U	U	P	P	U	U	U	D	U	U	P	P	U	U	P	P	U	U	U	D	U	U	P	P	U
purple coneflower	U	U	D	U	U	P	P	U	U	U	D	U	U	P	P	U	U	P	P	U	U	U	D	U	U	P	P	U
purple prairie clover	U	D	P	U	U	P	P	U	U	D	P	U	U	P	P	U	U	P	P	U	U	D	P	U	U	P	P	U
rush skeletonweed	U	U	U	U	N	N	N	N	U	U	U	U	N	N	N	N	N	N	N	N	U	U	U	U	N	N	N	N
scarlet gaura	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N	U	U	U	U	N	U	U	N
scarlet globemallow	U	U	D	U	U	D	D	U	U	U	D	U	U	D	D	U	U	D	D	U	U	U	D	U	U	D	D	U
silverleaf scurfpea	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N	U	U	U	U	N	U	U	N
wavyleaf thistle	U	U	U	U	N	N	N	N	U	U	U	U	N	N	N	N	N	N	N	N	U	U	U	U	N	N	N	N
western wallflower	U	D	U	U	N	U	U	N	U	D	U	U	N	U	U	N	N	U	U	N	U	D	U	U	N	U	U	N
western yarrow	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N	U	U	U	U	N	U	U	N
wild onion	U	D	U	U	U	D	D	U	U	D	U	U	U	D	D	U	U	D	D	U	U	D	U	U	U	D	D	U
Shrubs																												
chokecherry	D	T	T	D	D	T	T	D	D	T	T	D	P	U	D	P	D	U	U	D	D	T	T	D	P	U	U	P
currant	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	U	U	U	U	D	U	U	D	D	U	U	D
fringed sagewort	U	U	U	U	U	U	U	U	U	U	U	U	U	D	D	U	U	P	P	D	U	U	U	U	U	U	U	D
juneberry	N	D	P	U	N	D	P	U	N	D	P	U	N	D	P	U	N	D	P	U	N	D	P	U	N	D	P	U
prairie rose	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U
prickly rose	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U
silver buffaloberry	D	U	U	U	D	U	U	U	D	U	U	U	P	U	D	P	U	U	U	U	D	U	U	U	D	U	U	U
silver sagebrush	D	U	U	D	D	U	U	D	D	U	U	D	P	D	D	P	P	P	P	P	D	U	U	D	D	U	U	D
western snowberry	U	U	U	U	U	U	U	U	U	U	U	U	D	U	D	D	U	U	U	U	U	U	U	U	D	U	U	U
wild plum	D	U	U	D	D	U	U	D	D	U	U	D	P	U	D	D	D	U	U	D	D	U	U	D	D	U	U	D
winterfat	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Trees																												
American elm	N	N	N	N	N	N	N	N	N	N	N	N	N	U	D	N	N	N	N	N	N	N	N	N	N	N	N	N
boxelder	N	N	N	U	N	N	U	U	N	N	N	U	N	N	U	U	N	N	U	U	N	N	N	U	N	N	U	U
green ash	N	U	D	U	N	D	D	U	N	U	D	U	N	D	D	U	N	U	D	U	N	U	D	U	N	D	D	U
plains cottonwood	D	U	U	D	D	U	U	D	D	U	U	D	D	U	D	D	D	U	U	D	D	U	U	D	D	U	U	D

N = not used; **U** = undesirable; **D** = desirable; **P** = preferred; **T** = toxic

† Quarters: 1 – Jan., Feb., Mar.; 2 – Apr., May, Jun.; 3 – Jul., Aug., Sep.; 4 – Oct., Nov., Dec.

Animal Community – Grazing Interpretations

The following table lists suggested initial stocking rates for cattle under continuous grazing (year long grazing or growing season long grazing) under normal growing conditions; however, *continuous grazing is not recommended.* These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process and may need to be adjusted due to diet preferences of other types or kinds of livestock and/or other factors. Often, the current plant composition does not entirely match any particular plant community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using the following stocking rate information along with animal preference data, particularly when grazers other than cattle are involved. With consultation of the land manager, more intensive grazing management may result in improved harvest efficiencies and increased carrying capacity.

Plant Community	Production (lbs./acre)	Carrying Capacity [1] (AUM/acre)
Green Needlegrass/Western Wheatgrass/Shrub (HCPC)	2900	0.91 [2]
Western Wheatgrass/Blue Grama	1000	0.32
Blue Grama/Western Wheatgrass/Sagewort	800	0.25 [2]
Excessive Litter, Shrub	2600	0.82 [2]
Annual/Pioneer Perennial	-- [3]	-- [3]

[1] Continuous season-long grazing by cattle under average growing conditions.
[2] Stocking rates may need to be adjusted due to palatability and/or availability of forage.
[3] Highly variable; stocking rate needs to be determined onsite.

Hydrology Functions

Water is the principal factor limiting herbage production. The site is dominated by soils in hydrologic groups B. Infiltration varies from moderately slow to moderate and runoff potential varies from low to moderate depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75 percent ground cover have the greatest potential for high infiltration and lower runoff. An exception would be where short grasses form a dense sod and dominate the site. Areas where ground cover is less than 50 percent have the greatest potential to have reduced infiltration and higher runoff (refer to Section 4, NRCS National Engineering Handbook, for runoff quantities and hydrologic curves).

Recreational Uses

This site provides hunting opportunities for upland game species. The wide varieties of plants which bloom from spring until fall have an esthetic value that appeals to visitors.

Wood Products

No appreciable wood products are present on the site.

Other Products

Seed harvest of native plant species can provide additional income on this site.

Supporting Information

Associated Sites

(054XY023ND) – Loamy Overflow
(054XY031ND) – Loamy
(054XY042ND) – Sandy Terrace

Similar Sites

(054XY023ND) – Loamy Overflow (LyOv)
[Moderately well drained soils in intermittent drainage ways, swales, and areas that frequently receive additional moisture throughout the growing season, with no apparent water table. Indicator species: big bluestem with western wheatgrass and green needlegrass, American licorice, and western snowberry. This site has far more big bluestem, less western wheatgrass, and green needlegrass, frequent flooding events, more production.]

(054XY031ND) – Loamy (Ly)
[Does not receive additional moisture. Found on dry uplands upslope from loamy terraces or loamy overflow sites, down slope from thin loamy or shallow loam sites; similar landscape position as sandy, sands, clayey sites. Will ribbon greater than one inch and up to two inches. Indicator species are western wheatgrass some green needlegrass and blue grama, with fringed sagewort and western snowberry being the dominant shrubs. This site has more western wheatgrass and blue grama, less green needlegrass, and big bluestem, less productions and different landscape position that does not receives extra moisture due to occasional flooding.]

(054XY042ND) – Sandy Terrace (SyT)
[Well drained soils on a river or stream terrace in a position that will flood occasionally (once in 10 years) with no apparent water table. Indicator species are prairie sandreed evenly mixed with sand bluestem, some Canada wildrye, penstemon, and leadplant and/or western snowberry, and with possible trees. This site has more prairie sandreed, sand bluestem, sedges and shrubs, less green needlegrass, western wheatgrass, blue grama, similar production, and landscape position.]

Inventory Data References

Information presented here has been derived from NRCS clipping and other inventory data. Also, field knowledge of range-trained personnel was used. All descriptions were peer reviewed and/or field tested by various private, state, and federal agency specialists.

Those involved in developing this site description include: Dennis Froemke, NRCS Range Management Specialist; Jeff Printz, NRCS State Range Management Specialist; Stan Boltz, NRCS Range Management Specialist; Darrell Vanderbusch, NRCS Resource Soil Scientist; L. Michael Stirling, NRCS Range Management Specialist; David Dewald, NRCS State Biologist; and Brad Podoll, NRCS Biologist.

Data Source	Number of Records	Sample Period	State	County
SCS-RANGE-417	0			
Ocular estimates	4	1998 -2001	ND; SD	Dunn, Hettinger, Morton

State Correlation

This site has been correlated with North Dakota and South Dakota in MLRA 54.

Field Offices

Baker, MT	Buffalo, SD	Faith, SD	Mott, ND
Beach, ND	Carson, ND	Hettinger, ND	Selfridge, ND
Beulah, ND	Culbertson, MT	Killdeer, ND	Sidney, MT
Bison, SD	Dickinson, ND	Mandan, ND	Watford City, ND
Bowman, ND	Dupree, SD	McIntosh, SD	Wibaux, MT

Relationship to Other Established Classifications

Level IV Ecoregions of the Conterminous United States: 43a – Missouri Plateau.

Other References

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Site Description Approval

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State Range Management Specialist	Date
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